

I claim:

1. A system for dispersing rock dust into the air ventilation passages of an underground coal mine having an air ventilation pattern wherein fresh air is pumped from outside of the mine into the mine thru fresh air passageways leading to the mine work faces and wherein the contaminated air is forced out of the mine thru contaminated air return passageways, said system comprising container means for containing rock dust, ventilation air feed means communicating with the interior of said tank means, air-dust mixture air-dust mixture discharge port means in said tank means and adapted to be placed in communication with said return passageways, and dehumidifier means communicating with said ventilation air feed means for maintaining the feed air at a humidity level sufficiently low to prevent rock dust in said tank means from agglomerating.

2. The system of claim 1 wherein said dryer is a membrane dryer.

3. A method for dispersing rock dust into the air ventilation passages of an underground coal mine having an air ventilation pattern wherein fresh air is pumped from outside of the mine into the mine thru fresh air passageways leading to the mine work faces and wherein the contaminated air is forced out of the mine thru contaminated air return passageways, said method comprising pumping fresh air into passageways in said mine leading to work face areas and then into contaminated return air passageways leading away from said work face areas and from said mine, placing a discharge port of a rock dust container in said return air passageways, providing a pressurized ventilation fresh air stream into said container to force rock dust and air into said return air passageways, and dehumidifying said air stream to prevent wetting and agglomeration of the rock dust

particles and to thereby enhance the travel of said particles in said return air passageways.

4. The method of claim 3 wherein said fresh air stream is pressurized from about 75 psi to about 100 psi with from about one to about four CFM of volume.